

October 13, 2003

Public Employees' Retirement Board
State of Montana

Dear Members of the Board:

Actuarial valuations are normally performed every two years, as of July 1st of each even-numbered year. We have performed actuarial valuations of the following retirement systems as of July 1, 2002:

- Public Employees' Retirement System
- Municipal Police Officers' Retirement System
- Game Wardens' and Peace Officers' Retirement System
- Sheriffs' Retirement System
- Judges' Retirement System
- Highway Patrol Officers' Retirement System
- Firefighters' Unified Retirement System
- Volunteer Firefighters' Compensation Act

Subsequent to the actuarial valuation of the Game Wardens' and Peace Officers' Retirement System (GWPORS), we analyzed the impact of the transfer of employees of the Department of Corrections from the Public Employees' Retirement System to the GWPORS. The employee turnover assumptions for the 2002 actuarial valuation of GWPORS were set prior to the completion of the transfers. PERA provided information to us on the average turnover rate of employees of the Department of Corrections. If the 2002 GWPORS actuarial valuation had been performed using the revised employee turnover assumptions described in our letter to PERA dated January 20, 2003, GWPORS would likely have had a small Actuarial Surplus.

The member, employer, and state contributions are set forth in statute. Our findings as described above indicate the projected income stream from the contributions set forth in statute will be sufficient to pay the Normal Costs and amortize the Unfunded Actuarial Liability, if any, as a level percentage of future payroll, for all Systems. The amortization periods for the systems with an Unfunded Actuarial Liability are as follows:

- | | |
|--|------------|
| - Public Employees' Retirement System | 0.1 years |
| - Municipal Police Officers' Retirement System | 19.6 years |
| - Highway Patrol Officers' Retirement System | 8.7 years |
| - Firefighters' Unified Retirement System | 13.8 years |
| - Volunteer Firefighters' Compensation Act | 21.0 years |

In our opinion, each retirement system was being funded on an actuarially sound basis as of July 1, 2002, the date of the last actuarial valuations.



In preparing the valuations, we relied upon the financial and membership data furnished by the System, and the Independent Auditor's Report prepared the Legislative Audit Division. Although we did not audit this data, we compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficiently accurate for the purposes of our calculations.

Information as of June 30, 2002, presented in this Actuarial Section, including the following supporting tables, is based on information found in our actuarial valuation reports:

- Schedule of Active Member Valuation Data
- Solvency Test
- Summary of Actuarial (Gain) or Loss by Source
- Summary of Plan Provisions
- Summary of Actuarial Assumptions and Methods

In addition, data for the fiscal year ending June 30, 2002, contained in the Schedule of Funding Progress in the Financial Section, are based on information in our valuation reports.

The Retirement Board has sole authority to determine the actuarial assumptions and methods used for the actuarial valuations. The Board adopted all of the actuarial methods and assumptions used in the 2002 valuations.

The findings have been determined according to actuarial assumptions and methods that were chosen on the basis of recent experience of the system and of current expectations concerning future economic conditions. In our opinion, the assumptions used in the actuarial valuations are appropriate for purposes of the valuations, are internally consistent, and reflect reasonable expectations. The assumptions represent our best estimate of future conditions affecting the systems. Nevertheless, the emerging costs will vary from those presented in the reports to the extent that actual experience differs from that projected by the assumptions.

The actuarial valuation was prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Standards of Practice adopted by the Actuarial Standards Board of the American Academy of Actuaries. In addition, the assumptions and methods used meet the parameters set for disclosures by Governmental Accounting Standards Board Statement No. 25.

The undersigned is an independent actuary, a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, an Enrolled Actuary, and experienced in performing valuations for large public employee retirement systems.

Respectfully submitted,

Signature on File

Mark O. Johnson, F.S.A., M.A.A.A., E.A.
Consulting Actuary

Public Employees' Retirement Board

A Component Unit of the State of Montana

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

BACKGROUND

An actuarial valuation of the plans was completed in 2002 by the actuary, Milliman U. S. A. The most recent experience study was completed in 2000. This experience study investigates the actuarial experience of each plan administered by the PERB. The actuarial methods and assumptions are described in this section. The methods and assumptions have been chosen by the Board, based on the actuary's recommendation. The recommendations were formed on the basis of recent experience of the plans and on current expectations as to future economic conditions.

The assumptions are intended to estimate the future experience of the plans and the members of the plans in areas which affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated cost of the plan's benefits.

RECORDS AND DATA

The data used in the valuation consists of financial information and records of age, service and income of contributing members, former contributing members and their survivors. All data supplied to the actuary by the MPERA was accepted for valuation purposes without audit.

ACTUARIAL COST METHOD

A fundamental principle in financing the liabilities of a retirement program is that the cost of benefits should be related to when they

are earned, rather than when they are paid. There are a number of methods in use for making the determination.

The funding method used in the valuations is the Entry Age Cost Method. Under this method, the actuarial present value of projected benefits for each individual member included in the valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit age. The portion of this actuarial present value allocated to a valuation year is called the Normal Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future Normal Cost is called the Actuarial Liability.

The excess of the Actuarial Liability over the Actuarial Value of Assets is called the Unfunded Actuarial Liability. If the Actuarial Value of Assets exceeds the Actuarial Liability, the difference is called the Actuarial Surplus.

ASSET VALUATION METHOD

Asset values were supplied by the PERB and were accepted without audit by the actuary. The Actuarial Value of Assets is the market value, adjusted by a four-year recognition of gains and losses.

INVESTMENT RETURN

The future investment earnings of the assets of the plans are assumed to accrue at a net annual rate of 8.00%, net of all administrative and investment-related expenses.

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INTEREST ON MEMBER CONTRIBUTIONS

With the exception of VFCA, interest on member contributions at the time of the valuation was assumed to accrue at a net annual rate of 5.00%. The net annual rate was changed to 1.2% as of June 2003.

FUTURE SALARIES

Estimates of future salaries are based on two types of assumptions. Rates of increase in the general wage level of the membership are directly related to inflation, while individual salary changes due to promotion and longevity, referred to as the merit scale, occur even in the absence of inflation. The assumed increase in future salaries due to general wage growth is 4.50% per year for all plans. The merit scale is based on years of service and is in addition to the wage growth. The merit scale is calculated independently for each plan based on the factors applicable to the plan. VFCA is excluded from this calculation because members are unpaid volunteers.

MORTALITY

The probabilities of mortality for Healthy Retirees, Beneficiaries and Non-Retired Members are based on 1994 Uninsured Pensioner Tables for males and females and adjusted for each plan as stated in the following table:

Healthy Retirees, Beneficiaries and Non-Retired Members

| | <u>Males</u> | <u>Females</u> |
|--------|--------------|----------------|
| PERS | 0 | -1 |
| MPORS | +1 | 0 |
| GWPORS | +1 | 0 |
| SRS | +1 | 0 |
| JRS | 0 | -1 |
| HPORS | +1 | 0 |
| FURS | +1 | 0 |
| VFCA | 0 | -1 |

The probabilities of mortality for Disabled Retirees are based on the IRS Revenue Ruling 96-7 Males/Females Table and adjusted for each plan as stated below:

Disabled Retirees

| | <u>Males</u> | <u>Females</u> |
|--------|--------------|----------------|
| PERS | -1 | +3 |
| MPORS | +3 | +2 |
| GWPORS | +3 | +2 |
| SRS | +3 | +2 |
| JRS | -1 | +3 |
| HPORS | +3 | +2 |
| FURS | +3 | +2 |
| VFCA | -1 | +3 |

SERVICE RETIREMENT

The assumed rates of service retirement used in the valuations are dependent upon age and years of service and differ between plans. The rates are based on the actual experience of the individual plans as determined in the 2000 experience study. Under all plans, vested, terminated members are assumed to retire when first eligible for an unreduced benefit.

DISABLEMENT

The assumed rates of disablement are dependent upon ages and differ between plans. It is further assumed that 10% of all disabilities are duty-related, that all disabilities are permanent and that no disabled member will recover and return to work.

OTHER TERMINATIONS OF MEMBERSHIP

The assumed rates of termination, other than for retirement, death, or disability, are calculated individually for each plan. The JRS does not assume termination for any other reason than retirement, death or disability. The rates for the VFCA are based on a published table

ACTUARIAL SECTION

referred to as T-8, which reasonably represents the expected turnover rate of the volunteer firefighters other than for retirement or death.

TERMINATING MEMBERS ELECTING A REFUND

It is assumed that all terminating members that are non-vested will receive an immediate withdrawal of their member contributions with interest. The probability of a terminating member electing a refund of the member account balance is based on age and different for each plan as described in the actuary valuation. These assumptions do not apply to the JRS or VFCA.

IMPACT OF THE CHANGE IN BENEFITS

The 2001 legislative benefit enhancements impact the overall valuation of the plans. The table below shows the funding of the plans in 2000 as determined by the previous actuarial valuation. The 2002 valuations reflect what the valuation would have been under the previous benefits and the actual funding of the plans using the current benefits.

| UNFUNDED ACTUARIAL LIABILITY OR (ACTUARIAL SURPLUS) ¹ | | | |
|--|--------------------------|-------------------|---------------------|
| | 2002 Actuarial Valuation | | 2000 |
| | Revised Benefits | Previous Benefits | Actuarial Valuation |
| PERS | \$ 983 | \$ (487,480) | \$ (569,940) |
| MPORS | 83,311 | 54,635 | 51,283 |
| GWPORS | 379 | (9,625) | (9,044) |
| SRS | (16,965) | (35,870) | (38,502) |
| JRS | (14,081) | (15,028) | (14,678) |
| HPORS | 13,116 | 247 | (1,413) |
| FURS | 61,554 | 39,961 | 38,837 |
| VFCA | 7,554 | (1,374) | (1,017) |

¹ In Thousands

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Active Member Valuation Data

| System | Valuation Date | Number Members | Nbr ERs | Covered Payroll | Average Annual Pay | % Pay Increase |
|-----------|----------------------|----------------|------------|--------------------|--------------------|----------------|
| PERS-DBRP | June 30, 1998 | 28,091 | 499 | \$ 660,579,464 | \$ 23,516 | 2.62% |
| | June 30, 1999 | 28,662 | 504 | 687,999,902 | 24,004 | 2.08% |
| | June 30, 2000 | 29,500 | 506 | 725,692,382 | 24,600 | 2.48% |
| | June 30, 2001 | 29,641 | 510 | 771,477,410 | 26,027 | 5.80% |
| | June 30, 2002 | 29,808 | 515 | 808,747,026 | 27,132 | 4.24% |
| | June 30, 2003 | 28,604 | 521 | 848,894,150 | 29,677 | 9.38% |
| MPORS | June 30, 1998 | 545 | 20 | 17,873,196 | 32,795 | 4.90% |
| | June 30, 1999 | 554 | 21 | 18,952,664 | 34,211 | 4.32% |
| | June 30, 2000 | 571 | 21 | 20,251,728 | 35,467 | 3.67% |
| | June 30, 2001 | 580 | 21 | 20,898,510 | 36,032 | 1.59% |
| | June 30, 2002 | 585 | 22 | 22,228,818 | 37,998 | 5.46% |
| | June 30, 2003 | 601 | 22 | 23,289,318 | 38,751 | 1.98% |
| GWPORS | June 30, 1998 | 327 | 8 | 7,839,084 | 23,973 | -25.84% |
| | June 30, 1999 | 388 | 8 | 9,906,688 | 25,533 | 6.51% |
| | June 30, 2000 | 494 | 8 | 11,874,942 | 24,038 | -5.85% |
| | June 30, 2001 | 521 | 8 | 14,881,202 | 28,563 | 18.82% |
| | June 30, 2002 | 609 | 8 | 17,150,523 | 28,162 | -1.40% |
| | June 30, 2003 | 664 | 8 | 20,034,988 | 30,173 | 7.14% |
| SRS | June 30, 1998 | 611 | 56 | 20,126,942 | 32,941 | 3.42% |
| | June 30, 1999 | 617 | 56 | 20,920,496 | 33,907 | 2.93% |
| | June 30, 2000 | 611 | 56 | 21,559,395 | 35,285 | 4.07% |
| | June 30, 2001 | 623 | 56 | 22,647,766 | 36,353 | 3.02% |
| | June 30, 2002 | 642 | 56 | 24,521,275 | 38,195 | 5.07% |
| | June 30, 2003 | 661 | 56 | 25,540,317 | 38,639 | 1.16% |

The last actuarial valuation was performed as of June 30, 2002.

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| System | Valuation Date | Number Members | Nbr ERs | Covered Payroll | Average Annual Pay | % Pay Increase |
|--------------|----------------------|----------------|-----------|-------------------|--------------------|----------------|
| JRS | June 30, 1998 | 44 | 1 | \$ 3,143,815 | \$ 71,450 | 6.46% |
| | June 30, 1999 | 44 | 1 | 3,187,891 | 72,452 | 1.40% |
| | June 30, 2000 | 46 | 1 | 3,483,363 | 75,725 | 4.52% |
| | June 30, 2001 | 48 | 1 | 3,655,682 | 76,160 | 0.57% |
| | June 30, 2002 | 48 | 1 | 3,999,689 | 83,327 | 9.41% |
| | June 30, 2003 | 49 | 1 | 4,077,339 | 83,211 | -0.14% |
| HPORS | June 30, 1998 | 185 | 1 | 6,201,494 | 33,522 | 10.82% |
| | June 30, 1999 | 186 | 1 | 6,313,412 | 33,943 | 1.26% |
| | June 30, 2000 | 190 | 1 | 6,951,916 | 36,589 | 7.80% |
| | June 30, 2001 | 190 | 1 | 7,351,774 | 38,694 | 5.75% |
| | June 30, 2002 | 194 | 1 | 7,536,469 | 38,848 | 0.40% |
| | June 30, 2003 | 201 | 1 | 7,808,953 | 38,851 | 0.01% |
| FURS | June 30, 1998 | 426 | 14 | 15,103,774 | 35,455 | 2.69% |
| | June 30, 1999 | 426 | 14 | 15,756,583 | 36,987 | 4.32% |
| | June 30, 2000 | 419 | 14 | 16,548,691 | 39,496 | 6.78% |
| | June 30, 2001 | 425 | 14 | 16,722,339 | 39,347 | -0.38% |
| | June 30, 2002 | 437 | 16 | 17,952,794 | 41,082 | 4.41% |
| | June 30, 2003 | 441 | 16 | 18,608,166 | 42,195 | 2.71% |
| VFCA | June 30, 1998 | 2,537 | | | | |
| | June 30, 1999 | 2,564 | | | | |
| | June 30, 2000 | 2,502 | | | | |
| | June 30, 2001 | 2,524 | | | | |
| | June 30, 2002 | 2,609 | | | | |
| | June 30, 2003 | 2,629 | | | | |

Covered payroll is not applicable. Members are unpaid volunteers and do not contribute to the fund.

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Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Active Member Composition

| | PERS-DBRP | MPORS | GWPORS | SRS | JRS | HPORS | FURS | VFCA ¹ |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------|
| Average Age | 46.2 | 37.6 | 39.0 | 40.7 | 53.7 | 38.9 | 40.1 | 43.5 |
| Average Service | 9.1 | 9.4 | 4.8 | 8.9 | 8.6 | 9.8 | 12.4 | 8.6 |
| Average Salary | \$ 27,346 | \$ 37,870 | \$ 30,102 | \$ 38,111 | \$ 83,327 | \$ 37,518 | \$ 39,931 | - |
| Under Age 25 | | | | | | | | |
| Number Members | 656 | 18 | 28 | 17 | - | 3 | 9 | 104 |
| Average Salary | \$ 19,272 | 28,987 | 24,536 | 31,352 | - | 32,165 | 29,136 | - |
| Ages 25-29 | | | | | | | | |
| Number Members | 1,496 | 77 | 78 | 70 | - | 18 | 51 | 181 |
| Average Salary | \$ 23,444 | 32,469 | 27,588 | 34,313 | - | 31,910 | 33,652 | - |
| Ages 30-34 | | | | | | | | |
| Number Members | 2,098 | 143 | 105 | 116 | - | 44 | 78 | 227 |
| Average Salary | \$ 26,517 | 34,377 | 27,942 | 36,099 | - | 33,738 | 35,506 | - |
| Ages 35-39 | | | | | | | | |
| Number Members | 3,184 | 125 | 131 | 106 | 1 | 46 | 72 | 434 |
| Average Salary | \$ 26,150 | 35,836 | 30,264 | 36,225 | 82,407 | 38,748 | 37,797 | - |
| Ages 40-44 | | | | | | | | |
| Number Members | 4,699 | 100 | 93 | 110 | 4 | 37 | 85 | 460 |
| Average Salary | \$ 27,418 | 41,808 | 32,190 | 38,596 | 82,407 | 37,887 | 40,054 | - |
| Ages 45-49 | | | | | | | | |
| Number Members | 5,700 | 65 | 74 | 86 | 4 | 21 | 74 | 441 |
| Average Salary | \$ 28,404 | 44,349 | 32,808 | 41,963 | 84,095 | 41,791 | 44,648 | - |
| Ages 50-54 | | | | | | | | |
| Number Members | 5,538 | 44 | 61 | 76 | 17 | 19 | 46 | 373 |
| Average Salary | \$ 29,374 | 45,162 | 31,155 | 41,923 | 83,201 | 42,491 | 48,509 | - |
| Ages 55-59 | | | | | | | | |
| Number Members | 3,808 | 12 | 30 | 40 | 16 | 5 | 18 | 205 |
| Average Salary | \$ 28,641 | 53,307 | 32,750 | 40,654 | 84,186 | 42,055 | 47,252 | - |
| Ages 60-64 | | | | | | | | |
| Number Members | 1,938 | 1 | 9 | 17 | 4 | 1 | 4 | 118 |
| Average Salary | \$ 26,745 | 46,400 | 32,269 | 39,165 | 81,265 | 43,785 | 47,526 | - |
| Ages 66-69 | | | | | | | | |
| Number Members | 478 | - | - | 4 | 1 | - | - | 47 |
| Average Salary | \$ 21,240 | - | - | 43,133 | 82,407 | - | - | - |
| Age 70 & Over | | | | | | | | |
| Number Members | 213 | - | - | - | 1 | - | - | 19 |
| Average Salary | \$ 16,718 | - | - | - | 82,407 | - | - | - |

¹ Average Salary is not applicable to VFCA, members are unpaid volunteers.

The last actuarial valuation was performed as of June 30, 2002.

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Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Retirants and Beneficiaries

Added to and Removed from Rolls

| System | Year Ended | Number Added | Number Removed | End of Year Total | Benefits ¹ | Average Annual Benefit ² | % Benefit Increase |
|-----------|----------------------|--------------|----------------|-------------------|-----------------------|-------------------------------------|--------------------|
| PERS-DBRP | June 30, 1998 | 701 | 363 | 12,924 | \$87,379,510 | \$ 6,742 | 3.18% |
| | June 30, 1999 | 680 | 366 | 13,238 | 91,521,090 | 7,103 | 5.35% |
| | June 30, 2000 | 742 | 408 | 13,572 | 96,015,987 | 7,159 | 0.79% |
| | June 30, 2001 | 649 | 423 | 13,798 | 101,546,131 | 7,505 | 4.83% |
| | June 30, 2002 | 777 | 459 | 14,116 | 114,662,817 | 8,453 | 12.63% |
| | June 30, 2003 | 735 | 450 | 14,401 | 122,203,686 | 8,672 | 2.59% |
| MPORS | June 30, 1998 | 27 | 7 | 530 | 7,697,161 | 14,945 | 3.62% |
| | June 30, 1999 | 20 | 10 | 540 | 8,278,547 | 15,603 | 4.40% |
| | June 30, 2000 | 14 | 13 | 541 | 8,653,105 | 16,093 | 3.14% |
| | June 30, 2001 | 22 | 10 | 553 | 9,124,506 | 17,414 | 8.21% |
| | June 30, 2002 | 14 | 13 | 554 | 9,844,541 | 18,045 | 3.62% |
| | June 30, 2003 | 19 | 8 | 565 | 10,425,561 | 18,866 | 4.55% |
| GWPORS | June 30, 1998 | 2 | 1 | 78 | 1,123,020 | 14,360 | -0.17% |
| | June 30, 1999 | 2 | 0 | 80 | 1,153,214 | 14,777 | 2.90% |
| | June 30, 2000 | 2 | 0 | 82 | 1,210,991 | 15,097 | 2.17% |
| | June 30, 2001 | 0 | 3 | 79 | 1,235,308 | 15,566 | 3.11% |
| | June 30, 2002 | 3 | 3 | 79 | 1,230,427 | 15,828 | 1.69% |
| | June 30, 2003 | 4 | 1 | 82 | 1,316,309 | 16,955 | 7.12% |
| SRS | June 30, 1998 | 25 | 0 | 175 | 1,742,696 | 10,799 | 11.98% |
| | June 30, 1999 | 41 | 3 | 213 | 2,364,489 | 12,318 | 14.07% |
| | June 30, 2000 | 31 | 2 | 242 | 2,929,550 | 12,733 | 3.37% |
| | June 30, 2001 | 21 | 1 | 262 | 3,293,535 | 13,305 | 4.49% |
| | June 30, 2002 | 23 | 5 | 280 | 3,699,727 | 13,959 | 4.92% |
| | June 30, 2003 | 29 | 3 | 306 | 4,307,060 | 15,059 | 7.89% |

¹Includes active death benefit payments.

²Based on June monthly benefit totals.

The last actuarial valuation was performed as of June 30, 2002.

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| System | Year Ended | Number Added | Number Removed | End of Year Total | Benefits ¹ | Average Annual Benefit ² | % Benefit Increase |
|--------------|----------------------|--------------|----------------|-------------------|-----------------------|-------------------------------------|--------------------|
| JRS | June 30, 1998 | 4 | 1 | 50 | \$ 1,304,458 | \$ 26,361 | 3.65% |
| | June 30, 1999 | 1 | 3 | 48 | 1,319,084 | 31,934 | 21.14% |
| | June 30, 2000 | 0 | 1 | 47 | 1,379,363 | 29,153 | -8.71% |
| | June 30, 2001 | 8 | 4 | 51 | 1,430,623 | 28,771 | -1.31% |
| | June 30, 2002 | 0 | 0 | 51 | 1,566,110 | 30,704 | 6.72% |
| | June 30, 2003 | 0 | 1 | 50 | 1,551,557 | 31,007 | 0.99% |
| HPORS | June 30, 1998 | 9 | 1 | 244 | 3,771,004 | 14,680 | 4.09% |
| | June 30, 1999 | 13 | 3 | 254 | 4,085,281 | 15,444 | 5.20% |
| | June 30, 2000 | 11 | 4 | 261 | 4,396,044 | 16,227 | 5.07% |
| | June 30, 2001 | 5 | 6 | 260 | 4,624,420 | 16,920 | 4.27% |
| | June 30, 2002 | 7 | 2 | 265 | 4,861,329 | 17,677 | 4.48% |
| | June 30, 2003 | 6 | 4 | 267 | 5,159,762 | 18,669 | 5.61% |
| FURS | June 30, 1998 | 30 | 12 | 450 | 6,493,959 | 14,759 | 5.76% |
| | June 30, 1999 | 20 | 13 | 457 | 6,995,439 | 15,680 | 6.24% |
| | June 30, 2000 | 23 | 12 | 468 | 7,517,677 | 16,402 | 4.60% |
| | June 30, 2001 | 21 | 15 | 474 | 8,017,761 | 17,072 | 4.09% |
| | June 30, 2002 | 17 | 10 | 481 | 8,507,526 | 18,203 | 6.63% |
| | June 30, 2003 | 12 | 13 | 480 | 9,080,598 | 19,132 | 5.10% |
| VFCA | June 30, 1998 | 52 | 30 | 761 | 772,742 | 1,022 | 0.11% |
| | June 30, 1999 | 49 | 18 | 792 | 813,527 | 1,025 | 0.30% |
| | June 30, 2000 | 72 | 25 | 839 | 843,649 | 1,029 | 0.41% |
| | June 30, 2001 | 54 | 31 | 862 | 881,855 | 1,032 | 0.26% |
| | June 30, 2002 | 68 | 46 | 884 | 1,410,768 | 1,542 | 49.47% |
| | June 30, 2003 | 62 | 25 | 921 | 1,411,936 | 1,551 | 0.58% |

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Solvency Test

(in thousands)

| System | Valuation Date | Aggregate Accrued Liabilities for | | | Reported Assets | Portion of Accrued Liabilities Covered by Reported Asset | | |
|------------------|-----------------|-----------------------------------|-----------------------------|--------------------------------------|------------------|--|------------|------------|
| | | (1) | (2) | (3) | | (1) | (2) | (3) |
| | | Active Member Accounts | Retirants and Beneficiaries | Active Members (ER Financed portion) | | | | |
| PERS-DBRP | 06/30/98 | \$ 360,422 | \$ 949,365 | \$ 988,915 | \$ 2,113,314 | 100% | 100% | 81% |
| | 06/30/00 | 572,536 | 1,049,012 | 651,859 | 2,843,347 | 100 | 100 | 187 |
| | 06/30/02 | 645,403 | 1,366,634 | 1,065,727 | 3,076,781 | 100 | 100 | 100 |
| MPORS | 06/30/98 | 11,397 | 110,650 | 51,595 | 94,908 | 100 | 76 | - |
| | 06/30/00 | 18,465 | 118,855 | 43,789 | 129,826 | 100 | 94 | - |
| | 06/30/02 | 20,854 | 144,055 | 61,918 | 143,516 | 100 | 85 | - |
| GWPORS | 06/30/98 | 2,770 | 11,727 | 11,387 | 23,190 | 100 | 100 | 76 |
| | 06/30/00 | 5,851 | 12,313 | 5,758 | 32,966 | 100 | 100 | 257 |
| | 06/30/02 | 8,857 | 14,005 | 16,247 | 38,730 | 100 | 100 | 98 |
| SRS | 06/30/98 | 11,686 | 23,521 | 45,860 | 92,160 | 100 | 100 | 124 |
| | 06/30/00 | 17,261 | 37,124 | 33,451 | 126,338 | 100 | 100 | 215 |
| | 06/30/02 | 20,108 | 55,458 | 46,059 | 138,590 | 100 | 100 | 137 |

⁽¹⁾ Prior to 2000, "Active Member Accounts" included Regular Contributions without interest for active and inactive members. Beginning in 2000, "Active Member Accounts" includes Regular and Additional Contributions with interest, and excludes all accounts of inactive members.

The last actuarial valuation was performed as of June 30, 2002.

ACTUARIAL SECTION

| System | Valuation Date | Aggregate Accrued Liabilities for | | | Reported Assets | Portion of Accrued Liabilities Covered by Reported Asset | | |
|--------------|-----------------|-----------------------------------|-----------------------------|--------------------------------------|-----------------|--|------------|------------|
| | | (1) | (2) | (3) | | (1) | (2) | (3) |
| | | Active Member Accounts | Retirants and Beneficiaries | Active Members (ER Financed portion) | | | | |
| JRS | 06/30/98 | \$ 1,464 | \$ 19,855 | \$ 9,435 | \$ 31,646 | 100% | 100% | 109% |
| | 06/30/00 | 2,573 | 17,204 | 7,588 | 42,043 | 100 | 100 | 293 |
| | 06/30/02 | 2,708 | 18,977 | 9,197 | 44,963 | 100 | 100 | 253 |
| HPORS | 06/30/98 | 4,487 | 57,095 | 17,146 | 59,531 | 100 | 96 | - |
| | 06/30/00 | 6,174 | 57,422 | 12,801 | 77,810 | 100 | 100 | 111 |
| | 06/30/02 | 6,797 | 68,800 | 19,253 | 81,734 | 100 | 100 | 32 |
| FURS | 06/30/98 | 9,394 | 96,924 | 62,718 | 89,988 | 100 | 83 | - |
| | 06/30/00 | 16,083 | 100,260 | 45,986 | 123,492 | 100 | 100 | 16 |
| | 06/30/02 | 18,297 | 121,922 | 57,727 | 136,392 | 100 | 97 | - |
| VFCA | 06/30/98 | | 9,143 | 9,210 | 13,941 | | 100 | 52 |
| | 06/30/00 | | 9,614 | 7,138 | 17,769 | | 100 | 114 |
| | 06/30/02 | | 15,631 | 11,177 | 19,254 | | 100 | 32 |

Active member accounts are not applicable. Members are unpaid volunteers.

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Summary of Actuarial (Gain) or Loss by Source

(in thousands)

| | |
|---------------------------------------|-------------------|
| PERS-DBRP | |
| Investment (Gain) or Loss | \$ 226,733 |
| Demographic (Gain) or Loss | 16,061 |
| 2001 Benefit Enhancements | <u>488,462</u> |
| Total Actuarial (Gain) or Loss | \$ 731,256 |

| | |
|---------------------------------------|------------------|
| MPORS | |
| Investment (Gain) or Loss | \$ 11,474 |
| Demographic (Gain) or Loss | (2,642) |
| 2001 Benefit Enhancements | <u>28,676</u> |
| Total Actuarial (Gain) or Loss | \$ 37,508 |

| | |
|---------------------------------------|------------------|
| GWPORS | |
| Investment (Gain) or Loss | \$ 3,048 |
| Demographic (Gain) or Loss | 332 |
| 2001 Benefit Enhancements | <u>10,005</u> |
| Total Actuarial (Gain) or Loss | \$ 13,385 |

The last actuarial valuation was performed as of June 30, 2002.

SRS

| | |
|---------------------------------------|------------------|
| Investment (Gain) or Loss | \$ 10,502 |
| Demographic (Gain) or Loss | 670 |
| 2001 Benefit Enhancements | <u>18,905</u> |
| Total Actuarial (Gain) or Loss | \$ 30,077 |

JRS

| | |
|---------------------------------------|-----------------|
| Investment (Gain) or Loss | \$ 3,552 |
| Demographic (Gain) or Loss | (548) |
| 2001 Benefit Enhancements | <u>947</u> |
| Total Actuarial (Gain) or Loss | \$ 3,951 |

HPORS

| | |
|---------------------------------------|------------------|
| Investment (Gain) or Loss | \$ 6,593 |
| Demographic (Gain) or Loss | 717 |
| 2001 Benefit Enhancements | <u>12,869</u> |
| Total Actuarial (Gain) or Loss | \$ 20,179 |

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Summary of Actuarial (Gain) or Loss by Source (cont)

(in thousands)

| | | |
|---------------------------------------|-----------|---------------|
| FURS | | |
| Investment (Gain) or Loss | \$ | 10,879 |
| Demographic (Gain) or Loss | | (3,086) |
| 2001 Benefit Enhancements | | <u>21,593</u> |
| Total Actuarial (Gain) or Loss | \$ | 29,386 |

| | | |
|---------------------------------------|-----------|---------------|
| VFCA | | |
| Investment (Gain) or Loss | \$ | 1,294 |
| Demographic (Gain) or Loss | | 208 |
| 2001 Benefit Enhancements | | <u>8,927</u> |
| Total Actuarial (Gain) or Loss | \$ | 10,429 |

The last actuarial valuation was performed as of June 30, 2002.

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ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Summary of Defined Benefit Plan Provisions

The summary of plan provisions as of June 30, 2002, is presented separately for each plan.

Public Employees' Retirement System-DBRP

| | | |
|------------------------------|--------------|---|
| Service Retirement | Eligibility: | Age 65 regardless of membership service, or Age 60 and 5 years of membership service, or 30 years of membership service regardless of age |
| | Benefit: | Years of service credit, multiplied by highest average compensation (highest 36 consecutive months), multiplied by 1/56th if membership service at retirement is less than 25 years, or multiplied by 1/50th if membership service at retirement is at least 25 years |
| | Normal Form: | Monthly benefit for the life of the member, with a death benefit equal to the remaining balance of the member's contribution account |
| Early Retirement | Eligibility: | Age 50 and 5 years of membership service, or 25 years of membership service regardless of age |
| | Benefit: | Actuarial equivalent of the accrued benefit based on retirement at age 60 or 30 years of membership service |
| Disability Retirement | Eligibility: | 5 years of membership service |
| | Benefit: | If hired on or before February 24, 1991, the greater of (a) and (b) below: a) Years of service credit, multiplied by highest average compensation, multiplied by 90% of 1/56th (1/50th if 25 or more years of membership service), or (b) Highest average compensation multiplied by 25% |
| | | If hired after February 24, 1991: (a) Years of service credit, multiplied by highest average compensation, multiplied by 1/56th (1/50th if 25 or more years of membership service) |

| | | |
|--------------------------------|--------------|---|
| Death before Retirement | Eligibility: | Prior to 5 years of membership service |
| | Benefit: | The sum of (a) and (b) below: (a) Return of member contributions with interest, (b) Lump sum payment of one month's salary up to a maximum of six months' salary |
| | Eligibility: | 5 years of membership service |
| | Benefit: | Either the sum of (a) and (b), or (c) below: (a) Return of member contributions with interest, and (b) Lump sum payment of one month's salary up to a maximum of six months' salary, or (c) Actuarial equivalent of the accrued benefit at the time of death of the member |
| Termination Benefit | Eligibility: | Prior to 5 years of membership service |
| | Benefit: | Return of member contributions with interest |
| | Eligibility: | 5 years of membership service |
| | Benefit: | Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Actuarial equivalent of the accrued benefit based on a retirement age of 60 |
| Benefit Adjustments | Eligibility: | Retired members and beneficiaries beginning one year after retirement |
| | Benefit: | An annual adjustment (GABA) of 3.0% |
| Contributions | Members: | 6.90% of members' compensation |
| | Employers: | 6.90% of employees' PERS covered-payroll (offset by 0.10% of members' compensation paid by the State for local government and school district employers) |

ACTUARIAL SECTION

Municipal Police Officers' Retirement System

| | | |
|--------------------------------|--------------|--|
| Service Retirement | Eligibility: | 20 years of membership service regardless of age 5 years of membership service, and age 50 |
| | Benefit: | Years of service credit, multiplied by 2.5%, multiplied by (a) if hired before July 1, 1977: Average monthly compensation during final year of service, or (b) if hired on or after July 1, 1977: Average monthly compensation (for last consecutive 36 months) |
| | Normal Form: | Monthly benefit for the life of the member, with full benefits continuing to the surviving spouse or dependent children upon the death of the member |
| Disability Retirement | Eligibility: | Immediate |
| | Benefit: | If hired before July 1, 1977: Minimum of 50% of base salary If hired on or after July 1, 1977: Minimum of 50% of final average compensation |
| | | |
| Death before Retirement | Eligibility: | Immediate |
| | Benefit: | If hired before July 1, 1977: Minimum of 50% of base salary If hired on or after July 1, 1977: Minimum of 50% of final average compensation |
| | | |
| Termination Benefit | Eligibility: | Prior to 5 years of membership service |
| | Benefit: | Return of member contributions with interest |
| | Eligibility: | 5 years of membership service |
| | Benefit: | Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Accrued benefit at age 50 |

ACTUARIAL SECTION

| | | |
|----------------------------|--------------|--|
| Benefit Adjustments | Eligibility: | Retired members and beneficiaries |
| | Benefit: | Either (a) or (b) below: (a) An annual adjustment (GABA) of 3.0%, commencing one year after retirement for members hired on or after July 1, 1997, or if elected by the member, or (b) 50% of the salary of a newly confirmed police officer in the city in which the member was employed |
| Contributions | Members: | Either (a), (b), (c), (d), or (e) below: (a) If hired on or prior to June 30, 1975: 5.80% of member's compensation, or (b) If hired after June 30, 1975 and prior to July 1, 1979: 7.00% or (c) If hired after June 30, 1979 and prior to July 1, 1997: 8.50%, or (d) If hired on or after July 1, 1997: 9%, or (e) For members electing the GABA: 9% |
| | Employers: | 14.41% of members' compensation |
| | State: | 29.37% of members' compensation |
| | | |

ACTUARIAL SECTION

Game Wardens' and Peace Officers' Retirement System

| | | |
|--------------------------------|--------------|--|
| Service Retirement | Eligibility: | Age 50 and 20 years of membership service |
| | Benefit: | Years of service credit, multiplied by highest average compensation, multiplied by 2.50% |
| | Normal Form: | Monthly benefit for the life of the member, with a death benefit equal to the remaining balance of the member's contribution account |
| Disability Retirement | Eligibility: | 5 years of membership service, and service disablement |
| | Benefit: | Minimum of 50% of highest average compensation |
| | Eligibility: | Non-service disablement |
| | Benefit: | Actuarial equivalent of accrued benefit based on a retirement age of 50 |
| Death before Retirement | Eligibility: | Service death |
| | Benefit: | 50% of highest average compensation. If the member has more than 25 years of service credit, 2.0% of highest average compensation multiplied by years of service credit |
| | Eligibility: | Non-service death |
| | Benefit: | Actuarial equivalent of accrued benefit based on a retirement age of 55 |
| Termination Benefit | Eligibility: | Prior to 5 years of membership service |
| | Benefit: | Return of member contributions with interest |
| | Eligibility: | 5 years of membership service |

| | | |
|----------------------------|--------------|---|
| | Benefit: | Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Accrued benefit at age 55 |
| Benefit Adjustments | Eligibility: | Retired members and beneficiaries beginning one year after retirement |
| | Benefit: | An annual adjustment (GABA) of 3.0% |
| Contributions | Members: | 10.56% of members' compensation |
| | Employers: | 9.00% of members' compensation |

ACTUARIAL SECTION

Sheriffs' Retirement System

| | | |
|--------------------------------|--------------|--|
| Service Retirement | Eligibility: | 20 years of membership service regardless of age |
| | Benefit: | Years of service credit, multiplied by highest average compensation, multiplied by 2.50% |
| | Normal Form: | Monthly benefit for the life of the member, with a death benefit equal to the remaining balance of the member's contribution account |
| Early Retirement | Eligibility: | 5 years of membership service and attainment of age 50 |
| | Benefit: | Actuarial equivalent of the accrued benefit based on retirement at the earlier of completing 20 years of membership service, or age 60 |
| Disability Retirement | Eligibility: | Service disablement |
| | Benefit: | Minimum of 50% of highest average compensation |
| | Eligibility: | Non-service disablement |
| | Benefit: | Actuarial equivalent of accrued benefit based on a retirement age after completing 20 years of membership service or age 60 |
| Death before Retirement | Eligibility: | Service death |
| | Benefit: | 50% of highest average compensation |
| | Eligibility: | Non-service death |
| | Benefit: | Actuarial equivalent of accrued benefit based on a retirement age of 65, or completing 20 years of service credit |
| Termination Benefit | Eligibility: | Prior to 5 years of membership service |
| | Benefit: | Return of member contributions with interest |
| | Eligibility: | 5 years of membership service |

| | | |
|----------------------------|--------------|---|
| | Benefit: | Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Actuarial equivalent of the accrued benefit based on 20 years of membership service or a retirement age 60; commencing no sooner than the first day of the month following the member's 50th birthday |
| Benefit Adjustments | Eligibility: | Retired members and beneficiaries beginning one year after retirement |
| | Benefit: | An annual adjustment (GABA) of 3.0% |
| Contributions | Members: | 9.245% of members' compensation |
| | Employers: | 9.535% of members' compensation |

ACTUARIAL SECTION

Judges' Retirement System

| | | |
|--------------------------------|--------------|--|
| Service Retirement | Eligibility: | Age 60 and 5 years of membership service |
| | Benefit: | (1) If hired before July 1, 1997, the sum of (a) and (b) below: (a) Years of service credit (up to 15), multiplied by current salary, multiplied by 3-1/3%, plus (b) Years of service credit (over 15), multiplied by current salary, multiplied by 1.785% (2) If hired on or after July 1, 1997 or electing GABA: (a) Same formula as above, substituting highest average compensation for current salary |
| | Normal Form: | For non-GABA members - the monthly benefit for the life of the member, with a death benefit equal to the present value of the benefit at retirement, less the sum of all payments made to the date of death For GABA members - monthly benefit for the life of the member, with a death benefit equal to the remaining balance of the member's contribution account |
| | | |
| Disability Retirement | Eligibility: | Service disablement |
| | Benefit: | For non-GABA members – 50% of current salary For GABA members – 50% of highest average compensation |
| | Eligibility: | Non-service disablement |
| | Benefit: | Actuarial equivalent of accrued benefit based on a retirement age of 60 |
| Death before Retirement | Eligibility: | Service death |
| | Benefit: | Accrued benefit commencing at time of death |
| | Eligibility: | Non-service death |
| | Benefit: | Actuarial equivalent of accrued benefit based on a retirement age of 60 |

ACTUARIAL SECTION

| | | |
|----------------------------|--------------|--|
| Termination Benefit | Eligibility: | Prior to 5 years of membership service |
| | Benefit: | Return of member contributions with interest |
| | Eligibility: | 5 years of membership service |
| | Benefit: | Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Actuarial equivalent of the accrued benefit based on a retirement age of 60 |
| Benefit Adjustments | Eligibility: | Retired members and beneficiaries |
| | Benefit: | Either (a) or (b) below, as elected: (a) An annual adjustment (GABA) of 3.0%, commencing one year after retirement for members hired on or after July 1, 1997, or if elected by the member, or (b) The annual increase in compensation to active members |
| Contributions | Members: | 7.00% of members' compensation |
| | Employers: | 25.81% of members' compensation |

ACTUARIAL SECTION

Highway Patrol Officers' Retirement System

| | | |
|--------------------------------|--------------|---|
| Service Retirement | Eligibility: | 20 years of membership service regardless of age |
| | Benefit: | Years of service credit, multiplied by highest average compensation, multiplied by 2.50% |
| | Normal Form: | Monthly benefit for the life of the member, with full benefits continuing to the surviving spouse or dependent children upon the death of the member |
| Disability Retirement | Eligibility: | Service disablement |
| | Benefit: | Minimum of 50% of highest average compensation |
| | Eligibility: | Non-service disablement |
| | Benefit: | Actuarial equivalent of accrued benefit based on a retirement age of 60 |
| Death before Retirement | Eligibility: | Service death |
| | Benefit: | 50% of highest average compensation, less benefits paid from workers' compensation |
| | Eligibility: | Non-service death |
| | Benefit: | Actuarial equivalent of accrued benefit based on a retirement age of 60 |
| Termination Benefit | Eligibility: | Prior to 5 years of membership service |
| | Benefit: | Return of member contributions with interest |
| | Eligibility: | 5 years of membership service |
| | Benefit: | Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Actuarial equivalent of the accrued benefit based on a retirement age of 60 |

ACTUARIAL SECTION

| | | |
|----------------------------|--------------|---|
| Benefit Adjustments | Eligibility: | Retired members and beneficiaries |
| | Benefit: | Either (a) or (b) below, as elected: (a) An annual adjustment (GABA) of 3.0%, commencing one year after retirement, or (b) 2% per year of service of the base salary of a probation officer, but not to exceed an increase of 5% per year |
| | Lump Sum: | For members retired prior to July 1, 1991, a lump sum payment limited to the increase in the Consumer Price Index |
| Contributions | Members: | Either (a) or (b) below: (a) 9.00% of members' compensation, or (b) 9.05% for members electing the GABA |
| | Employers: | 36.33% of members' compensation |

ACTUARIAL SECTION

Firefighters' Unified Retirement System

| | | |
|--------------------------------|--------------|---|
| Service Retirement | Eligibility: | 20 years of membership service regardless of age |
| | Benefit: | <p>If hired on or after June 30, 1981, and those electing GABA, years of service credit, multiplied by final average compensation, multiplied by 2.50%</p> <p>If hired before June 30, 1981, and those not electing GABA – the greater of:</p> <ul style="list-style-type: none">(a) 2.5% of final average compensation, or(b) i. If less than 20 years of membership service, 2% of final average compensation,ii. If greater than 20 years of membership service, 50% of final average compensation, plus years of service in excess of 20, multiplied by final average compensation, multiplied by 2.00% |
| | Normal Form: | Monthly benefit for the life of the member, with full benefits continuing to the surviving spouse or dependent children upon the death of the member |
| Disability Retirement | Benefit: | <ul style="list-style-type: none">(a) If less than 20 years of membership service, 50% of final average compensation(b) If greater than 20 years of membership service, 2.5% of final average compensation for each year of service credit |
| Death before Retirement | Benefit: | <ul style="list-style-type: none">(a) If less than 20 years of membership service, 50% of final average compensation(b) If greater than 20 years of membership service, 2.5% of final average compensation for each year of service credit |
| Termination Benefit | Eligibility: | Prior to 5 years of membership service |
| | Benefit: | Return of member contributions with interest |
| | Eligibility: | 5 years of membership service |

ACTUARIAL SECTION

| | | |
|----------------------------|--------------|--|
| | Benefit: | Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Accrued benefit at age 50 |
| Benefit Adjustments | Eligibility: | Retired members and beneficiaries |
| | Benefit: | Greater of (a) or (b) below: (a) An annual adjustment (GABA) of 3.0% commencing one year after retirement for members hired on or after July 1, 1997, or if elected by the member, or (b) members with at least 10 years of service and who did not elect GABA - 50% of the salary of a newly confirmed firefighter in the city in which the member was employed |
| Contributions | Members: | Either (a) or (b) below: (a) 9.50% of members' compensation, or (b) 10.70% for members hired after July 1, 1997 or electing the GABA |
| | Employers: | 14.36% of members' compensation |
| | State: | 32.61% of members' compensation |

ACTUARIAL SECTION

Volunteer Firefighters' Compensation Act

| | | |
|--------------------------------|--------------|---|
| Service Retirement | Eligibility: | Age 55 and 20 years of service (full benefit), or Age 60 and 10 years of service (partial benefit) |
| | Benefit: | \$7.50 per year of service, with a maximum benefit of \$225 per month |
| | Normal Form: | Monthly benefit for the life of the member, with no survivorship benefits |
| Disability Retirement | Eligibility: | Service disability |
| | Benefit: | \$7.50 per year of service, with a minimum of \$75 and a maximum of \$225 per month |
| Death before Retirement | Eligibility: | 10 years of service |
| | Benefit: | \$7.50 per year of service. Recipient may receive a lump sum payment or a monthly benefit until a total of 40 monthly benefits have been paid |
| Termination Benefit | Eligibility: | Accrued benefit at retirement age of 60 |
| Contributions | Members: | None |
| | State: | 5% of premium taxes collected |